



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

PUBLIC HEALTH REPORTS.

VOL. XXV.

SEPTEMBER 2, 1910.

No. 35.

SMALLPOX IN JAPAN.

By FAIRFAX IRWIN, Surgeon, United States Public Health and Marine-Hospital Service.

The existence of smallpox in Japan ^a can be traced back as far as any written history goes, leaving its inception somewhat shrouded in mystery.

The first record is of an epidemic that occurred in August, A. D. 735. In 737 another epidemic occurred affecting all classes and of great mortality. This is said to have been the greatest epidemic known in Japan up to that time, and was followed by another in the summer and autumn of 738. These were the first recorded epidemics. In A. D. 790 there was an epidemic which was said only to have affected persons of 30 years of age or older, but the observation seems to be of doubtful authenticity. There followed an interval which appears to have been free from the disease.

Other epidemics then followed, which are recorded as follows: In 814; in March, 853; in 879; in August, 915, when the Emperor had the disease; in June, 947; August and September, 974; and July and August, 993; in the spring and summer of 1020; in 1036; and in June, 1072. In the year 1077 two of the royal princes, Atsukata and Atsubume, died of smallpox. Epidemics continued with great frequency, as follows: 1093; February-May, 1113; May, 1148; March, 1175, when the Emperor had the disease; December, 1192; April, 1209, 1277, 1311; and March, 1361. In 1374 the Emperor established a benevolent hospital for the treatment of the disease, the first hospital of its kind in Japan. Other epidemics took place in 1424, 1452, 1454, 1522, and 1550. In 1549 Xavier first came to Japan and gave medicine to the Japanese; the record does not state the character of the treatment, but there is no doubt that Xavier saw a great many cases. In 1543 the Portuguese came to Japan and settled on the Island of Kyushu.

Smallpox was certainly no novelty to them. In February, 1609, an epidemic is recorded in which the royal family suffered. About this time the Dutch came to Japan and trade was opened with Holland; they were allowed to live at Nagasaki and taught the medical science of those days to the Japanese. In 1798, the Government opened the first medical school (Igakukwan). The etiology of smallpox was first studied in this school under Prof. Ikeda Zuisen, a famous physician of the time.

^a Surgeon Irwin stated that according to official reports smallpox was not present in Japan July 27, 1910.

One of the legends relating to the first introduction of smallpox into Japan is as follows: In the sixth century the King of Korea sent images of Buddha to Japan and recommended that the Japanese adopt the Buddhist religion. About this time there was a great epidemic, probably smallpox, and it was attributed to the anger of the native gods at the attempt to introduce foreign gods and religion into the country. Possibly the disease may have been introduced at this time by the messengers of the Korean King. The Japanese might have well said: "Beware of the Greeks bearing gifts." In the spring and autumn of 1837 there was an epidemic. In June, 1849, a Dutch ship brought some vaccine virus to Japan and Doctor Monike vaccinated three children. Doctor Narabayashi Soken obtained some of this virus from Doctor Monike and was instructed in the art of vaccination. Severe epidemics occurred in 1870, 1876, and 1877.

In two of the ancient books of Japan (Daido Ruijuho and Zoku Kojidan) it is stated that smallpox was first brought into the Empire by fishermen returning from Korea. Official statistics of smallpox in Japan have been obtained from the department of home affairs for the following years (1898, 1899, 1900, 1904, 1905, 1906, 1907, and 1908) and are here given: In 1898 there were 149,012 cases and 40,971 deaths, giving a death rate of 27.47. In 1899 there were 14,890 cases and 4,089 deaths. In 1900 there were 3,608 cases and 721 deaths. In 1904, 1,188 cases were recorded, with 237 deaths. Let it be observed that the death rate had now fallen from 27.47 in 1898 to 19.95 in 1904. In 1905 there were 10,704 cases and 3,388 deaths. We have here a decided increase in the number of cases and deaths and a rise in the death rate to 31.61 per hundred cases. It is stated that while smallpox is not a rare disease in Japan it is not permanent. It is always imported from abroad, and the infection seems to come chiefly from Korea, Manchuria, and Siberia. During 1906 there were 496 cases, of which 109 proved fatal, the death rate falling to 21.98. The total number of cases of smallpox which occurred during the year 1907 was 1,034, of which 437 were fatal, and in 1908 there were 18,075 cases and 5,838 deaths.

It is to be expected that the death rate should differ accordingly as vaccination is carried out, but unfortunately statistical investigations of this kind are not yet available. The death rate in 1907 in general was 42.26 per cent and 32.30 per cent in 1908. Whether such high death rates are to be ascribed to the fact that the smallpox which prevailed in these two years was especially malignant or whether light cases were not reported or again whether the number of unvaccinated increased can not now be answered.

VACCINATION.

PRESENT LAW OF VACCINATION.

1. Mayors of cities and heads of villages fix the time for vaccination every year from March until June.

- Children 1 year old born the previous year must be vaccinated.

- Children having reached the age of 10 years must be vaccinated.

- Those who were vaccinated the previous year, but unsuccessfully, must be vaccinated again.

- If necessary, officials may decide to vaccinate at any time.

- The sanitary officials may decide the place of vaccination.

- The guardians of the children having smallpox must obey the regulations.

6. The officials may vaccinate at different times and places all inhabitants of houses where an infectious disease has appeared.

7. If for any reason the day for vaccination is postponed, the vaccination must be made within 30 days.

8. A search must be made for any person attempting to evade vaccination and the operation performed.

9. Inspection is to be made 6 or 7 days after vaccination.

10. A certificate for vaccination is given after the operation is performed.

11. There are three kinds of reports made to the mayor at the office of the Honseki, or in the official report at the original place of birth:

(a) The date on which the first vaccination was performed.

(b) The date of operation if not successful, second vaccination.

(c) Whether the subject had smallpox.

12. The mayor must make a report to the place where the person concerned is at present living.

13. Certificate from the physician must be secured.

14. When vaccination is unnecessary:

(a) Persons who have had smallpox and have certificate to that effect.

(b) Persons who have been certified for the postponement of vaccination.

(c) Kindergarten and other schools where the vaccination has been performed under other supervision.

(d) Those who have a certificate of vaccination.

(e) Those who have a certificate from the mayor.

(f) Those who have marks of smallpox and of recent vaccination.

15. The governor may temporarily decide on the time of vaccination by permission of the home minister.

From Meiji 42 year (1909).

The total number of persons who were regularly vaccinated during the year 1908 was 9,398,135, which is 18.26 per cent of the entire population. These figures are taken from the report of the central sanitary bureau, which adds the following comment:

This percentage is almost three times as large as that in ordinary years. Such great increase is probably due to the fact that during this year smallpox prevailed, and consequently vaccination was strictly enforced in various localities. However, the fact that the number of persons responsible (sic) to be vaccinated remarkably increased, especially during this year, can not but demonstrate the imperfection of the administration concerning vaccination.

Of the number vaccinated 1,876,638 were vaccinated for the first time and 7,494,084 for the second and third times.

RESULTS OF VACCINATIONS.

Of the total number of persons regularly vaccinated during 1907, 1,274,320 were successful and 172,838 were unsuccessful in first vaccination; 344,162 successful and 645,982 unsuccessful in second vaccination; and 225,471 successful and 636,323 unsuccessful in third; that is to say, the proportion of successful cases to the total number of vaccinations was 88.06 per cent in first vaccination, 34.76 per cent in second vaccination, and 25.59 per cent in third vaccination.

Of the total number vaccinated during 1908, 1,556,263 were successful and 320,395 were unsuccessful in first vaccination; 1,244,555 successful and 1,535,309 unsuccessful in second vaccination, and 1,661,596 successful and 3,052,651 unsuccessful in third vaccination.

Thus the proportion of successful cases to the total number of vaccinations was 82.93 per cent in first vaccination, the lowest ratio since 1899, while 44.77 per cent in second vaccination and 35.25 per cent in third vaccination are high ratios. The real cause for such sudden rise of the ratio in second and third vaccinations is not positively known, but it seems to be due to the fact that many persons who had neglected vaccination in previous years were now forced to submit owing to a more vigorous enforcement of the laws. Appended is a table showing the number of persons vaccinated in the decade 1890-1899.

Number of persons vaccinated in each of the last ten years.

FIRST VACCINATION.

Year.	Successful.	Unsuccessful.	Total.	Successful per 100.
1890	919,583	139,501	1,059,084	86.83
1891	922,102	146,756	1,138,858	87.11
1892	1,093,455	217,770	1,311,225	83.39
1893	977,271	223,161	1,200,432	81.41
1894	982,541	248,873	1,231,414	79.79
1895	956,019	236,526	1,192,545	80.17
1896	1,173,055	298,397	1,471,452	79.72
1897	1,259,796	411,869	1,671,665	75.36
1898	1,067,889	253,884	1,321,773	80.79
1899	1,101,788	217,409	1,319,197	83.52
Average	1,052,350	239,415	1,291,765	81.47

SUBSEQUENT VACCINATIONS.

1890	282,395	596,480	878,875	32.13
1891	337,575	693,761	1,031,336	32.73
1892	897,923	1,779,613	2,677,536	33.54
1893	937,017	1,770,379	2,707,396	34.61
1894	559,382	1,231,948	1,791,330	31.23
1895	441,553	944,931	1,386,484	31.85
1896	661,036	1,490,300	2,151,336	30.73
1897	1,766,411	3,622,669	5,389,080	32.78
1898	576,987	1,231,054	1,808,041	31.91
1899	522,229	1,103,063	1,625,292	32.13
Average	698,251	1,446,420	2,144,671	32.09

GRAND TOTAL.

1890	1,937,959
1891	2,170,194
1892	3,988,761
1893	3,907,828
1894	3,022,744
1895	2,579,029
1896	3,622,788
1897	7,060,745
1898	3,129,814
1899	2,944,489
Average	3,436,435

SPECIAL VACCINATION.

Year.	Successful.	Unsuccessful.	Total.	Successful per 100.
1890	11,620	36,001	47,621	24.40
1891	22,171	32,426	54,597	40.61
1892	666,473	1,431,238	2,097,711	31.77
1893	1,398,509	2,688,365	4,086,874	34.22
1894	450,922	752,261	1,203,183	37.48
1895	74,230	195,387	269,617	25.31
1896	343,949	712,495	1,056,444	32.56
1897	2,691,854	5,949,085	8,640,939	31.15
1898	133,845	264,867	398,712	33.57
1899	164,250	409,968	574,218	38.60
Average	595,782	1,247,209	1,842,992	32.33